# COOPER LIGHTING - METALUX®

## DESCRIPTION

The 2HB series is an outstanding solution for high mounting height industrial or retail applications. The 2HB optic has been optimized to provide maximum performance from either the T5 or T8 lamps. Optional uplight component is provided to enable excellent ceiling uniformity. 2HB's high lumen package allows the benefits of fluorescent to be applied at high mounting heights that were traditionally exclusive to H.I.D. The primary benefits include exceptional color rendering, high system efficacy, 95% lumen maintenance, long lamp life, instant on/instant re-strike, economical dimming, and uniform brightness control. Primary applications include retail, shopping malls, light industrial, gymnasiums and recreational

| | | |
|---|---|---|
| Catalog # | | Type |
| Project | | |
| Comments | | Date |
| Prepared by | | |

## SPECIFICATION FEATURES

### A ... Construction
Full bodied steel housing utilizes captive fasteners to protect optical assembly and assure structural integrity. The housing features an integral ballast channel that adds strength and provides numerous KOs for easy installation. Optional Top Access Plate allows service in electrical compartment without removal of lamps. Die-formed internal reflectors are available in both high reflectance specular material or in painted after fabrication white enamel.

### B ... Electrical
Class "P" ballasts are positively secured by mounting bolts. Pressure-lock lampholders. Optional modular power receptacle meets UL2459 and NEC 410.73 and is UL/cUL rated for make and break under load from outside the luminaire to speed maintenance. UL/CUL listed. Suitable for damp locations. Thermally optimized for environments up to 149°F (65°C) when used with high temperature ballasts in an open uplight configuration.

### C ... Finish
White enamel finish preceded by a multistage cleaning cycle, iron phosphate coating with rust inhibitor to protect against contaminants and oxidation.

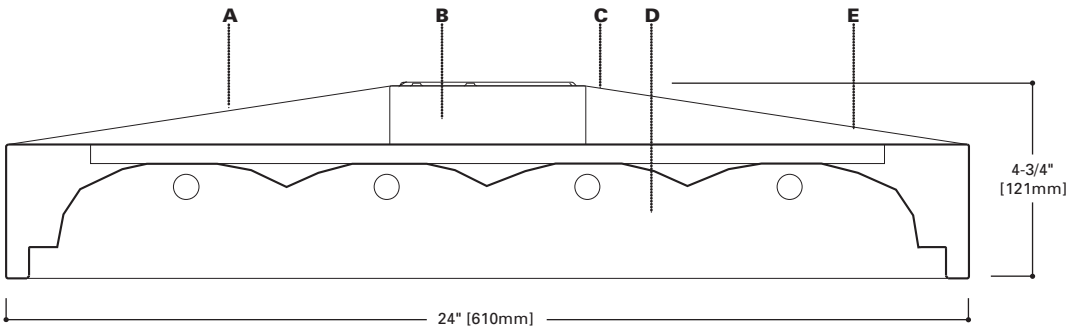
### D ... Downlight/Uplight Optics
Die formed reflectors are faceted with two optical distributions: medium and wide. Medium beam optical modules utilize 95% specular aluminum while the wide distribution utilizes a high performance 95% reflective polyester powder coated finish. Gasketed door frame and lens assembly is optional for more demanding environments. Uplight option provided to enable ceiling uniformity.

### E ... Mounting
The 2HB series is suited for surface, suspension mounting with optional
wire hook and chain set, stem or cable mounting. Top connector box mounting is also available.

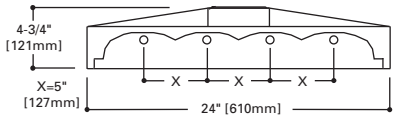
### Options
Integral Occupancy Sensor available and provides from 600 sq. ft. (MS) up to 1250 sq. ft. (MSO) of coverage in a maximum mounting height of 40'.

# F-BAY 2HB
SERIES

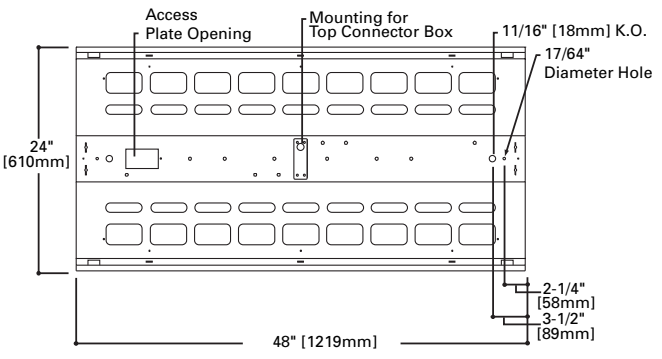
**2' x 4' High-Bay**
**4 Lamp**
**HIGH-BAY INDUSTRIAL LUMINAIRE**




## LAMP CONFIGURATIONS




## DIMENSION TOP VIEW




## ENERGY DATA

Input Watts:
**ER/PLUS Ballast & STD Lamps**
432 = 144W

**ER Ballast & STD Lamps**
432 = 112W
454 = 229W

**EB/PLUS Ballast & STD Lamps**
432 = 147W

**EB Ballast & STD Lamps**
432 = 109W

Luminaire Efficacy Rating
**LER = 74** (White)
**LER = 69** (Specular Inserts)
**Catalog Number: 2HB-454T5-UNV-EBT1**

**Yearly Cost of 1000 Lumens, 3000 hrs. at .08 KWH** = $3.48

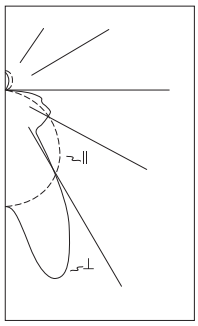
* Reference the lamp/ballast data in the Technical Section for specific lamp/ballast requirements

** Consult Pre Sales Technical Support.

**LAMPS CONTAIN MERCURY. DISPOSE ACCORDING TO LOCAL, STATE OR FEDERAL LAWS**

**LINEAR DISCONNECT**
Safe and convenient means of disconnecting power

**Specifications and Dimensions subject to change without notice.**
Consult your representative for additional options and finishes.



**2HB-454T5-UPL**
Electronic Ballasts
(4) F54T5/830 HO lamps
4400 lumens
Spacing criterion: (II) 1.2 x mounting height, (⊥) 1.2 x mounting height
Efficiency 92.7%
Test Report: 2HB454T5UPL.IES
LER =69
Yearly Cost of 1000 lumens, 3000 hrs at .08 KWH = $3.48

**Candela**

| Angle | Along II | 45° | Across ⊥ |
|---|---|---|---|
| 0 | 5108 | 5108 | 5108 |
| 5 | 5058 | 5272 | 5533 |
| 10 | 4983 | 6118 | 7612 |
| 15 | 4860 | 7745 | 8477 |
| 20 | 4687 | 8179 | 7737 |
| 25 | 4466 | 7661 | 6119 |
| 30 | 4197 | 6528 | 4015 |
| 35 | 3888 | 5019 | 2272 |
| 40 | 3535 | 3222 | 2136 |
| 45 | 3150 | 1901 | 2143 |
| 50 | 2729 | 1737 | 2136 |
| 55 | 2285 | 1672 | 2121 |
| 60 | 1836 | 1601 | 2128 |
| 65 | 1397 | 1533 | 1993 |
| 70 | 975 | 1464 | 1606 |
| 75 | 600 | 1124 | 1553 |
| 80 | 302 | 968 | 1189 |
| 85 | 92 | 432 | 317 |
| 90 | 2 | 10 | 11 |

**Coefficients of Utilization**

Effective floor cavity reflectance 20%

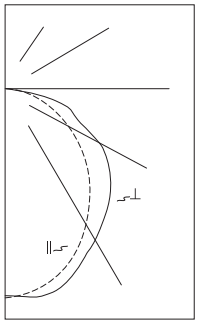
| rc | 80% | | | | 70% | | | | 50% | | | 30% | | | 10% | | | 0% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| rw | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 109 | 109 | 109 | 109 | 106 | 106 | 106 | 106 | 101 | 101 | 101 | 96 | 96 | 96 | 91 | 91 | 91 | 89 |
| 1 | 101 | 97 | 93 | 90 | 98 | 94 | 91 | 88 | 90 | 87 | 85 | 85 | 83 | 81 | 81 | 80 | 78 | 76 |
| 2 | 93 | 86 | 80 | 75 | 90 | 84 | 78 | 74 | 80 | 75 | 72 | 76 | 73 | 69 | 73 | 70 | 67 | 65 |
| 3 | 85 | 77 | 70 | 64 | 83 | 75 | 69 | 63 | 72 | 66 | 62 | 69 | 64 | 60 | 66 | 62 | 59 | 57 |
| 4 | 79 | 69 | 61 | 56 | 77 | 67 | 60 | 55 | 64 | 59 | 54 | 62 | 57 | 53 | 60 | 55 | 52 | 50 |
| 5 | 73 | 62 | 54 | 48 | 70 | 60 | 53 | 48 | 58 | 52 | 47 | 56 | 50 | 46 | 54 | 49 | 45 | 43 |
| 6 | 67 | 56 | 48 | 42 | 65 | 55 | 47 | 42 | 53 | 46 | 41 | 51 | 45 | 41 | 49 | 44 | 40 | 38 |
| 7 | 62 | 51 | 43 | 38 | 61 | 50 | 43 | 37 | 48 | 42 | 37 | 46 | 41 | 36 | 45 | 40 | 36 | 34 |
| 8 | 58 | 46 | 38 | 33 | 56 | 45 | 38 | 33 | 44 | 37 | 33 | 42 | 36 | 32 | 41 | 36 | 32 | 30 |
| 9 | 54 | 42 | 34 | 29 | 52 | 41 | 34 | 29 | 40 | 33 | 29 | 38 | 32 | 38 | 37 | 32 | 28 | 26 |
| 10 | 50 | 38 | 31 | 26 | 49 | 37 | 31 | 26 | 36 | 30 | 26 | 35 | 29 | 25 | 34 | 29 | 25 | 23 |

**Zonal Lumen Summary**

| Zone | Lumens | %Lamp | %Fixture |
|---|---|---|---|
| 0-30 | 5533 | 31.4 | 33.9 |
| 0-40 | 8327 | 47.3 | 51.0 |
| 0-60 | 12541 | 71.3 | 76.9 |
| 0-90 | 15612 | 88.7 | 95.7 |
| 0-180 | 16318 | 92.7 | 100.0 |

**Typical VCP Percentages**

| | Height Along | | Height Across | |
|---|---|---|---|---|
| Room Size (Ft.) | 8.5′ | 10.0′ | 8.5′ | 10.0′ |
| 20 x 20 | 45 | 51 | 35 | 46 |
| 30 x 30 | 36 | 41 | 23 | 30 |
| 30 x 60 | 33 | 36 | 16 | 18 |
| 60 x 30 | 33 | 38 | 26 | 33 |
| 60 x 60 | 29 | 32 | 19 | 19 |



**2HB-454T5-G-UPL**
Electronic Ballasts
(4) F54T5/830 HO lamps
4400 lumens
Spacing criterion: (II) 1.3 x mounting height, (⊥) 1.4 x mounting height
Efficiency 99.3%
Test Report: 2HB454T5G.IES
LER =74
Yearly Cost of 1000 lumens, 3000 hrs at .08 KWH = $3.23

**Candela**

| Angle | Along II | 45° | Across ⊥ |
|---|---|---|---|
| 0 | 5064 | 5064 | 5064 |
| 5 | 5041 | 5072 | 5100 |
| 10 | 4982 | 5085 | 5176 |
| 15 | 4885 | 5092 | 5168 |
| 20 | 4745 | 5015 | 5073 |
| 25 | 4565 | 4870 | 4906 |
| 30 | 4347 | 4667 | 4699 |
| 35 | 4094 | 4407 | 4514 |
| 40 | 3807 | 4118 | 4365 |
| 45 | 3487 | 3841 | 4206 |
| 50 | 3135 | 3588 | 4004 |
| 55 | 2752 | 3322 | 3741 |
| 60 | 2339 | 3025 | 3417 |
| 65 | 1895 | 2667 | 2950 |
| 70 | 1426 | 2265 | 2283 |
| 75 | 953 | 1619 | 1981 |
| 80 | 516 | 1214 | 1333 |
| 85 | 148 | 436 | 308 |
| 90 | 0 | 0 | 0 |

**Coefficients of Utilization**

Effective floor cavity reflectance 20%

| rc | 80% | | | | 70% | | | | 50% | | | 30% | | | 10% | | | 0% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| rw | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 118 | 118 | 118 | 118 | 115 | 115 | 115 | 115 | 110 | 110 | 110 | 106 | 106 | 106 | 101 | 101 | 101 | 99 |
| 1 | 108 | 103 | 99 | 95 | 105 | 101 | 97 | 93 | 96 | 93 | 90 | 93 | 90 | 87 | 89 | 87 | 85 | 83 |
| 2 | 98 | 89 | 82 | 77 | 95 | 87 | 81 | 76 | 84 | 79 | 74 | 81 | 76 | 72 | 78 | 74 | 71 | 68 |
| 3 | 89 | 78 | 70 | 64 | 87 | 77 | 69 | 63 | 74 | 67 | 62 | 71 | 66 | 61 | 69 | 64 | 60 | 58 |
| 4 | 81 | 69 | 60 | 53 | 79 | 68 | 60 | 53 | 65 | 58 | 52 | 63 | 57 | 52 | 61 | 55 | 51 | 49 |
| 5 | 74 | 61 | 51 | 45 | 72 | 60 | 51 | 44 | 57 | 50 | 44 | 55 | 49 | 43 | 54 | 48 | 43 | 41 |
| 6 | 68 | 54 | 45 | 38 | 66 | 53 | 44 | 38 | 51 | 43 | 38 | 50 | 43 | 37 | 48 | 42 | 37 | 35 |
| 7 | 62 | 48 | 39 | 33 | 61 | 48 | 39 | 33 | 46 | 38 | 33 | 44 | 38 | 32 | 43 | 37 | 32 | 30 |
| 8 | 57 | 43 | 34 | 28 | 56 | 43 | 34 | 28 | 41 | 33 | 28 | 40 | 33 | 28 | 39 | 32 | 28 | 26 |
| 9 | 53 | 39 | 30 | 24 | 51 | 38 | 30 | 24 | 37 | 29 | 24 | 36 | 29 | 24 | 35 | 28 | 24 | 22 |
| 10 | 49 | 35 | 27 | 21 | 48 | 35 | 27 | 21 | 34 | 26 | 21 | 33 | 26 | 21 | 32 | 25 | 21 | 19 |

**Zonal Lumen Summary**

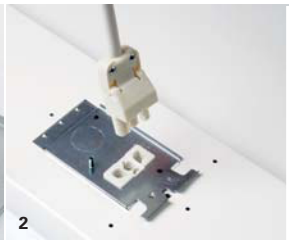
| Zone | Lumens | %Lamp | %Fixture |
|---|---|---|---|
| 0-30 | 4134 | 23.5 | 23.7 |
| 0-40 | 6882 | 39.1 | 39.4 |
| 0-60 | 12836 | 72.9 | 73.5 |
| 0-90 | 17469 | 99.3 | 100.0 |
| 0-180 | 17469 | 99.3 | 100.0 |

**Typical VCP Percentages**

| | Height Along | | Height Across | |
|---|---|---|---|---|
| Room Size (Ft.) | 8.5′ | 10.0′ | 8.5′ | 10.0′ |
| 20 x 20 | 30 | 38 | 23 | 31 |
| 30 x 30 | 24 | 27 | 17 | 21 |
| 30 x 60 | 22 | 24 | 14 | 15 |
| 60 x 30 | 24 | 28 | 21 | 24 |
| 60 x 60 | 22 | 23 | 17 | 16 |

## Modular F-Bay Power Supply

Cooper Lighting's F-Bay Modular Power Supply option allows external fixture access for safe and easy servicing. There is no need to remove lamps or reflectors to disconnect fixture power with F-Bay Modular Power Supply. Access to the individual fixtures power supply allows servicing without turning off all the fixtures disrupting occupants. F-Bay Modular Power Supply is a time saver in installation – simply plug & power.




1. Modular Power Supply Receptacle supplied mounted into fixture Access Plate.
2. Modular Power Cord & Plugs in 120, 277, 347, & 480V configurations for easy plug & power into existing supply.

No internal fixture access required for installation or disconnecting power.

Modular Motion Sensor Option supplied with Mounting Box and Modular Power Supply Receptacle.

### Code Compliance

- UL/cUL Certified for Make/Break under load (UL2549)
- Meets NEC requirements for ballast disconnect (NEC 410.73G)
- Allows for addition of Occupancy Sensor without hard connections
- Receptacles complete with insulating dustcap

## ORDERING INFORMATION

**SAMPLE NUMBER: 2HB-432-A-UNV-EB82/PLUS-UPL-U**

**Width**
**2**=24"

**Series**
**HB**=High Bay

**Mounting Arrangement**
**Blank**=Stand Alone
**R**=Continuous Row Mount

**No. of Lamps**
**4**=4 Lamps

**Lamp Type**
**32**=32W T8 Lamps (48")
**28T5**=28W T5 Lamps (48")
**54T5**=54W T5HO Lamps (48")

**Distribution**
**Blank**=Medium (Specular Aluminum)
**G**=Wide (High Reflectance White)

**Shielding** [12]
**Blank**=None
**A**=Prismatic Acrylic Lens & Doorframe
**WG**=Wireguard & Doorframe
**A/WG**=Acrylic Lens, Wireguard & Doorframe
**CL**=Clear Acrylic Lens & Doorframe
**CL/WG**=Clear Lens, Wireguard & Doorframe
**CL/DWG**=Clear Lens, Drop Wireguard & Doorframe
**DWG**=Drop Wireguard & Doorframe
**A/DWG**=Acrylic Lens, Drop Wireguard & Doorframe

**Voltage** [2]
**UNV**=Universal 120/277 Voltage
**UNC**=Universal 347/480 Voltage
**120V**=120 Volt
**277V**=277 Volt
**347V**=347 Volt
**480V**=480 Volt

**Options**
**Lamps Installed**
**L8830**=T8 Lamp, 85CRI 3000K
**L8835**=T8 Lamp, 85CRI 3500K
**L8841**=T8 Lamp, 85CRI 4100K
**L8850**=T8 Lamp, 85CRI 5000K
**L5830**=T5 Lamp, 85CRI 3000K
**L5835**=T5 Lamp, 85CRI 3500K
**L5841**=T5 Lamp, 85CRI 4100K
**L5850**=T5 Lamp, 85CRI 5000K

**GL**=Single Element Fuse
**GM**=Double Element Fuse
**EL**=Emergency Installed[2]

**Ballast Type**
**T8 Systems**
**EB8__**=T8 Electronic Instant Start.[4] Total Harmonic Distortion < 10%
No. of Ballast: 1 or 2

**EB8__/PLUS**= T8 Electronic Instant Start.[4] High Ballast Factor >1.15. Total Harmonic Distortion < 10%
No. of Ballast: 1 or 2

**ER8__**=T8 Electronic Program Rapid Start.[4] Total Harmonic Distortion < 10%
No. of Ballast: 1 or 2

**ER8__/PLUS**= T8 Electronic Program Start.[4] High Ballast Factor >1.15. Total Harmonic Distortion < 10%
No. of Ballast: 1 or 2

**T5 Systems**
**EBT__**=T5 Linear Electronic Program Rapid Start.[3] Total Harmonic Distortion < 10%
No. of Ballast: 1 or 2

**EHT__**=T5 Linear Electronic Program Start High Ambient.[7] [8] [12] Total Harmonic Distortion < 10%
No. of Ballast: 1 or 2

**DIM**=Consult Factory[13]

**Options**
**NUA**=No uplight apertures in housing. (Cannot be combined w/UPL)
**UPL**=Uplight Apertures
**PI/CPI**=Plug-In (1, 2 or 3)[9] see ordering information below
**TILW**=Tandem Inline Wiring
**MWS**=Modular Wiring System
**MS**=Aisle Coverage Motion Sensor[5]
**MSO**=360° Coverage Motion Sensor[5]
**C3**=3' Power Cord
**C6**=6' Power Cord
**G2**=Gasketed Door (Requires Selection of Lensed Doorframe)
**MP**=Modular Power Receptacle[1]
**PC3**-=3' Power Cord & Plug (Specify Voltage)[2]
**PC6**-=6' Power Cord & Plug (Specify Voltage)[2]
**TAP**=Top Access Plate[11]
**TCBP**=Top Connector Box Plate[6]

**Packaging**
**U**=Unit Pack
**PAL**=Palletized Out of Carton
**PALC**=Palletized In Carton

**Accessories** (order separately)
**AYC-CHAIN/SET/U**=(2) Hooks, 36" Chain Sets w/S-Hooks[10]
**TCB**=Top Connector Box
**RH-1**=Retrofit Hanger
**FH-1**=Fixture Hook
**FL-1**=Fixture Loop
**HB-SPS**=Single Point Cable Kit (13" Drop Length)
**GRIPPLE-Y-**=Y Mounting Toggle, #2 Cable (Specify 10' or 30')
**MC3**=3' Modular Power Cord
**MPC3**=3' Modular Power Cord & Plug (Specify Voltage)
**MC6**=6' Modular Power Cord
**MPC6**=6' Modular Power Cord & Plug (Specify Voltage)
**MMS-CPD1200H**=Aisle Motion Sensor, Box, Modular Power Receptacle (120-277V)
**MMS-CPD500H**=360° Motion Sensor, Box, Modular Power Receptacle (120-277V)

**NOTES:** [1]Requires use of MC_ or MPC_cord accessories, specify voltage for plugs. [2]Voltage must be specified when ordered with plugs, motion or emergency ballasts. [3]EBT ballast systems suitable for operation in ambient environments up to 104°F (40°C) in open uplight configuration. [4]ER8 and EB8 ballast systems suitable for operation in ambient environments up to 122°F (50°C) in open uplight configuration. [5]Specify voltage. [6]For use with Top Connector Box options. See accessories. [7]2 lamp ballast configurations only in UNC versions. [8]EHT/HT5/HCT5 ballast systems suitable for ambient environments not to exceed 149°F (65°C) in open uplight configurations and less lens option. [9]Cannot be combined with cord or cord & plug. See PI ordering information below. [10]Not for use in high abuse applications such as gymnasiums.[11]For use with T8 system with a maximum of two ballasts (including Emergency ballast). [12]Lensed 6-Lamp T5HO luminaire must use High Ambient ballast option (EHT). [13]Dimming ballast must be specified at time of order.

**Doorframes** (for field installation)[12]
**2HB-4-A-W/FRM PK**=Prismatic Acrylic Lens & Frame (2HB)
**2HB-FRM/CL PK**=Clear Acrylic Lens & Frame (2HB)
**2HB-FRM/WG PK**=Wireguard & Frame (2HB)
**2HB-FRM/CL/WG PK**=Clear Acrylic Lens, Frame and Wireguard (2HB)
**2HB-FRM/LENS/DROPWG PK**=Drop Wireguard, Prismatic Lens and Frame (2HB)
**2HB-FRM/LENS/DROPWG PK**=Drop Wireguard, Prismatic Acrylic Lens and Frame (2HB)
**2HB-FRM/DROPWG PK**=Drop Wireguard and Doorframe

## PI OPTION ORDERING INFORMATION

| Catalog Number Suffix | Number of Circuits | Circuit Wired To Ballast |
|---|---|---|
| PI 1 BLK | 1 | Black |
| PI 2 BLU | 2 | Blue |
| PI 2 BLK | 2 | Black |
| PI 3 RED | 3 | Red |
| PI 3 BLU | 3 | Blue |
| PI 3 BLK | 3 | Black |

### Catalog Numbering System

The PI System is available in sections up to 8' in length for continuous row wiring by simply plugging the sections together. Each PI section is factory wired to the ballast leads. Color coding of wires is as follows:

**PI-1** = One Circuit - 2 Wires: one black, one white
**PI-2** = Two Circuits - 3 Wires: one black, one blue, one white
**PI-3** = Three Circuits - 4 wires: one black, one blue, one red, one white

When ordering the PI2/PI3 System it is necessary to specify the number of fixtures required for each circuit. All wiring to external feeds, using cord or cord & plug, are responsibility of installing licensed contractor. Cord and cord & plug sets must be ordered separately if PI option is chosen.

### PI1 - Single Circuit Plug-In

**SAMPLE NUMBER: PI1BLK-WG**

**PI1**= Single Circuit
**BLK**=Black Hot

**NG**= No Ground (ground provided by fixture body)
**WG**= With Ground (separate ground wire in harness)

For complete product data, reference the Fluorescent Specification binder. Specifications & dimensions subject to change without notice. Consult your Cooper Lighting Representative for availability and ordering information.

### PI2 - Two Circuit Plug-In

**SAMPLE NUMBER: PI2BLK-WG**

**PI2**= Two Circuit
**BLK**=Black Hot
**BLU**=Blue Hot

**Leave Blank**=Single Neutral
**/WHT**=White Neutral
**/GRY**=Gray Neutral

**Leave Blank**=Single Neutral
**2NEU**=Two Neutrals

**NG**= No Ground (ground provided by fixture body)
**WG**= With Ground (separate ground wire in harness)

### PI3 - Three Circuit Plug-In

**SAMPLE NUMBER: PI3BLK-WG**

**PI3**= Three Circuit
**BLK**=Black Hot
**BLU**=Blue Hot
**RED**=Red Hot

**Leave Blank**=Single Neutral
**/WHT**=White Neutral
**/GRY**=Gray Neutral

**Leave Blank**=Single Neutral
**2NEU**=Two Neutrals

**NG**= No Ground (ground provided by fixture body)
**WG**= With Ground (separate ground wire in harness)

### SHIPPING INFORMATION

| Catalog No. | Wt. |
|---|---|
| 2HB-432-G-120V-UPL | 22 lbs. |
| 2HB-454T5-120V-UPL | 22 lbs. |